

AMENDMENTS TO THE ABSTRACT

Please substitute the following paragraph(s) for the abstract now appearing in the currently filed specification:

~~The present invention aims to provide~~ Disclosed is a magnetic sensor provided with a magnetoresistive effect element capable of stably maintaining a direction of magnetization in a magnetic domain of a free layer.

The magnetic sensor includes a magnetoresistive effect element provided with narrow zonal portions ~~11a 11a~~ including a pinned layer and a free layer. Disposed below both ends of the free layer are bias magnet films ~~11b 11b~~ ~~composed of a permanent magnet that apply a~~ applies to the free layer bias magnetic field to the free layer in a predetermined direction and an initializing coil 31 ~~that is disposed in the vicinity of~~ near the free layer ~~and applies to the free layer a magnetic field having the direction same as that of the bias magnetic field by being energized under a predetermined condition.~~ Further, magnetizing the bias magnet films and fixing a ~~[[the]]~~ direction of magnetization of the pinned layer are performed by a magnetic field formed by a magnet array configured such that ~~plural~~ permanent magnets are arranged on a lattice point of a tetragonal lattice wherein ~~and a polarity of a magnet pole~~ polarity of each permanent magnet is different from a ~~polarity of the other~~ adjacent magnet pole polarity spaced by the shortest route.